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CLAIMS

1. A method for transmitting data between a mobile first device (1; 1'; 1"), in particular a vehicle, and a data center (2; 2') at least temporarily remote from the first device (1; 1'; 1"), wherein data transmission takes place via at least one mobile first transmitter device (1.1; 1.1'; 1.1"), characterized in that the transmitted data comprise first data that are authenticated by cryptographic means.
2. The method according to claim 1, characterized in that the first data for authenticating a first source (1.2, 4, 5; 8) of the first data comprise a first source identification.
3. The method according to claim 1 or 2, characterized in that the first data for authenticating a first receiver (2.2) of the first data comprise a first receiver identification.
4. The method according to one of the preceding claims, characterized in that the first data for authenticating the transmission of the first data comprise a transmission identification.
5. The method according to one of the preceding claims, characterized in that the first data comprise at least one time code characteristic for a specifiable event.
6. The method according to one of the preceding claims, characterized in that the authenticated first data are incorporated into a protocol data set that is stored in the first device (1; 1', 1") and/or the data center (2; 2').

7. The method according to one of the preceding claims, characterized in that the first data are authenticated using at least one first digital signature.
8. The method according to one of the preceding claims, characterized in that the first data comprise monitoring data transmitted from the first device (1; 1'; 1'') to the data center (2; 2'), which comprise at least a first acquisition value of a first acquisition variable, which was determined by a first acquisition device (4, 5; 10; 14, 15.1, 16.1) of the first device (1; 1'; 1'').
9. The method according to claim 8, characterized in that the first acquisition variable is a state variable of the first device (1; 1'; 1'').
10. The method according to one of the preceding claims, characterized in that the first data comprise at least operation influencing data that were transmitted to the first device (1; 1'; 1'') for influencing the operation of the first device (1; 1'; 1'').
11. The method according to one of the preceding claims, characterized in that the data are transmitted via at least one second data transmitter device (3.1; 8.2).
12. A method for monitoring a mobile first device, in particular a vehicle, in which first data are transmitted between the mobile first device (1; 1'; 1'') and a data center (2; 2') at least temporarily remote from the first device (1; 1'; 1'') via at least one mobile first transmitter device (1.1; 1.1'; 1.1'') using the method according to one of the preceding claims, characterized in that the first data comprise first monitoring data

transmitted from the first device (1; 1'; 1'') to the data center (2; 2'), wherein

- the first monitoring data comprise at least a first acquisition value of a first acquisition variable, which was determined by a first acquisition device (4, 5; 10; 14, 15.1, 16.1) of the first device,
 - the first monitoring data are verified in the data center (2; 2') and,
 - given a successful verification, the first monitoring data are analyzed in the data center (2; 2').
13. The method according to claim 12, characterized in that a first monitoring response is initiated in the data center (2; 2') as a function of the analysis of the first monitoring data.
14. The method according to claim 13, characterized in that the first monitoring response comprises an invoicing process.
15. The method according to claim 13 or 14, characterized in that the first monitoring response comprises the generation of operation influencing data that are transmitted to the first device (1; 1'; 1'') for influencing the operation of the first device (1; 1'; 1'').
16. The method according to one of claims 13 to 15, characterized in that additional data not transmitted from the first device (1; 1'; 1'') are taken into account during the analysis.
17. An arrangement for transmitting data between a mobile first device, in particular a vehicle, and a data center (2; 2') at least temporarily remote from the first device (1; 1'; 1''), wherein at least one mobile first transmitter (1.1; 1.1'; 1.1'') is provided for transmitting the data, characterized in that the transmitted data comprise first data, and at

least one security device (1.2, 2.2; 1.2'; 1.2'') is provided, designed to generate a first data set representing the first data, and to authenticate the first data via cryptographic means.

18. The arrangement according to claim 17, characterized in that the security device (1.2, 2.2; 1.2'; 1.2''), for authenticating a first source (1.2, 4, 5; 8) of the first data, is designed for incorporating a first source identification into the first data set.
19. The arrangement according to claim 17 or 18, characterized in that the security device (1.2, 2.2; 1.2'; 1.2''), for authenticating a first receiver (2.2) of the first data, is designed for incorporating a first receiver identification into the first data set.
20. The arrangement according to one of claims 17 to 19, characterized in that the security device (1.2, 2.2; 1.2'; 1.2''), for authenticating the transmission of the first data, is designed for incorporating a transmission identification into the first data set.
21. The arrangement according to one of claims 17 to 20, characterized in that the security device (1.2, 2.2; 1.2'; 1.2'') is designed to incorporate at least one time code characteristic for a specifiable event into the first data set.
22. The arrangement according to one of claims 17 to 21, characterized in that the security device (1.2, 2.2; 1.2'; 1.2'') is designed to incorporate the authenticated first data into a protocol data set, and that the first device (1; 1'; 1'') has a first protocol memory (1.5) for storing the protocol data set and/or the data center (2; 2') has a second protocol memory for storing the protocol data set.

23. The arrangement according to one of claims 17 to 22, characterized in that the security device (1.2, 2.2; 1.2'; 1.2'') is designed to form a first digital signature using the first data.
24. The arrangement according to one of claims 17 to 23, characterized in that the first device (1; 1'; 1'') comprises a first security device (1.2; 1.2'; 1.2'') and/or the data center (2; 2') comprises a second security device (2.2).
25. The arrangement according to one of claims 17 to 24, characterized in that the first data transmitted from the first device (1; 1'; 1'') to the data center (2; 2') comprise first monitoring data, which comprise one first acquisition value for a first acquisition variable, wherein the first device comprises a first acquisition device (4, 5; 10; 14, 15.1, 16.1) for acquiring the first acquisition value.
26. The arrangement according to claim 25, characterized in that the first acquisition device (4, 5; 10; 14, 15.1, 16.1) is designed for determining a state variable of the first device (1; 1'; 1'') as a first acquisition variable.
27. The arrangement according to one of claims 17 to 26, characterized in that the first data transmitted from the data center (2; 2') to the first device (1; 1'; 1'') comprise operation-influencing data, wherein the first device (1; 1'; 1'') has an operation influencing device (6; 10; 15.1) for influencing the operation of the first device (1; 1'; 1'', 15) as a function of the operation influencing data.
28. The arrangement according to one of claims 17 to 26, characterized in that at least a second data transmitter device (3.1; 8.2) is provided for

transmitting data between the first device (1; 1') and the data center (2; 2').

29. An arrangement for monitoring a first mobile device, in particular a vehicle, with an arrangement for transmitting first data according to one of claims 17 to 28, characterized in that
- the first data from the first device (1; 1'; 1'') comprise first monitoring data transmitted to the data center (2; 2''), which comprise at least a first acquisition value of a first acquisition variable, wherein the first device (1; 1'; 1'') comprises a first acquisition device (4, 5; 10; 14, 15.1, 16.1) for acquiring the first acquisition value,
 - the data center (2; 2') has a second security device (2.2) for verifying the first monitoring data, and
 - the data center (2; 2') has an analyzer device (2.4) connected with the second security device (2.2) for analyzing the first monitoring data as a function of the verification result.
30. The arrangement according to claim 29, characterized in that at least one monitoring response device (2.5, 2.6, 2.7) that can be connected with the analyzer device (2.4) is provided for executing a first monitoring response, and the analyzer device (2.4) is designed to trigger the monitoring response device (2.5, 2.6, 2.7) for initiating a first monitoring response as a function of the result from analyzing the first monitoring data.
31. The arrangement according to claim 30, characterized in that an invoicing device (2.5) that can be connected with the analyzer device (2.4) is provided as the monitoring response device.

32. The arrangement according to claim 30 or 31, characterized in that
- the monitoring response device (2.6, 2.7) is designed to generate operation influencing data for influencing the operation of the first device (1; 1'; 1", 15) as the first monitoring response,
 - the data center (2, 2') is designed to transmit first data to the first device (1; 1'; 1"), wherein the first data comprise the operation influencing data, and
 - the first device (1; 1'; 1") has an operation influencing device (6; 10; 15.1) for influencing the operation of the first device as a function of the operation influencing data.
33. The arrangement according to claim 33, characterized in that
- the first device (1; 1'; 1") encompasses a first security device (1.2; 1.2'; 1.2") that is designed to verify the first data comprising the operation influencing data, and
 - the operation influencing device (6; 10; 15.1) is designed to influence the operation of the first device (1; 1'; 1", 15) as a function of the verification result.
34. The arrangement according to one of claims 29 to 33, characterized in that the analyzer device (2.4) is designed to take into account other data not transmitted from the first device.
35. A mobile first device, in particular a vehicle, for an arrangement according to one of claims 17 to 34, characterized by a first data transmitter device (1.1; 1.1'; 1.1") for transmitting first data, and a first security device (1.2; 1.2'; 1.2") that can be connected with the first data transmitter device (1.1; 1.1'; 1.1") and is designed to generate a first

data set representing the first data, and to authenticate the first data via cryptographic means.

36. The mobile first device according to claim 35, characterized in that the first security device (1.2; 1.2'; 1.2"), for authenticating the first data transmitter device (1.1; 1.1'; 1.1"), is designed for incorporating an identification allocated to the first data transmitter device (1.1; 1.1', 1.1") into the first data set.
37. A data center for an arrangement according to one of claims 17 to 34, characterized by a data transmitter device (2.1) for transmitting first data, and a second security device (2.2) that can be connected with the data transmitter device (2.1), and is designed to generate a first data set representing the first data, and to authenticate the first data via cryptographic means.